If you are using a printed copy of this procedure, and not the on-screen version, then you MUST make sure the dates at the bottom of the printed copy and the on-screen version match.
The on-screen version of the Collider-Accelerator Department Procedure is the Official Version.
Hard copies of all signed, official, C-A Operating Procedures are kept on file in the C-A ESHQ Training Office, Bldg. 911A.

C-A OPERATIONS PROCEDURES MANUAL

7.1.23 Seal Gas Compressor Start-Up

Text Pages 2 through 5

Hand Processed Changes

HPC No.	Date	Page Nos.	Initials

Approved: ***Signature on File*** _____
Collider-Accelerator Department Chairman Date

D. Lederle

7.1.23 Seal Gas Compressor Start-Up

1. Purpose

This procedure provides instructions for starting the seal gas compressors (Sullaire & Dunham-Bush), associated with the turbines on the RHIC 25 kW helium refrigerator located in the refrigeration wing of 1005R.

2. Responsibilities

2.1 The shift supervisor, or an operator designated by the shift supervisor, is responsible for conducting the procedure and providing documentation in the Cryogenic Control Room Log.

2.2 Should a problem arise in the process of starting the seal gas compressor, the shift supervisor shall report to the technical supervisor for instructions before continuing.

3. Prerequisites

3.1 Main cooling water system operating (cooling towers).

4. Precautions

4.1 If there is liquid helium in the refrigerator pots, all personnel entering the refrigeration wing of 1005R must have a Personal Oxygen Monitor (POM) and carry an emergency escape pack.

5. Procedure

5.1 Sullaire

_____ 1. Ensure oil level is visible in the upper sight glass.

_____2. Ensure open control air supply valve. Valve is located on manifold mounted to Adsorber 'A' (upper level).

_____ 3. Ensure circuit breaker #1 of the Main Distribution Panel is in the 'On' position and the associated fused disconnect is closed. Both items are located on the lower level south wall across from the compressor.

_____ 4. Ensure closed manual bypass valve H1273M_____.

_____ 5. Ensure open the low pressure surge tank inlet valve H1269M_____.

_____ 6 Open Sullaire suction valve H1274M_____.

_____ 7. Close Dunham-Busch suction valve H1275M_____.

_____ 8. Open Sullaire Discharge valve H1284M_____.

_____ 9 Close Dunham-Bush discharge valve H1285M_____.

_____ 10. Ensure open the seal gas compressor common discharge valves H1256M_____ (valve is located on ceiling of lower level near Vacuum System#1), and H2928M_____ (valve is located outside compressor Bldg. upstream of aerosol skid).

_____ 11. Ensure open the seal gas compressor make-up valve from pure helium gas. Valve is located on the column between Adsorbers 'A' and 'B' on the lower level.

_____ 12. Open coolant water return valve W942M____ and supply valve W941M____ (water supply and return to Rotoflow oil skid #1 must also be open to provide a path).

_____ 13. On the seal gas control panel, place the Local/Remote switch in Remote.

_____ 14. Reset any local alarms on the compressor control panel.

_____ 15. Ensure open the high pressure surge tank isolation valve (located on tank outside of west end of refrigerator room).

_____ 16. On CRISP control page D69, click on "Start Compressor". The seal gas compressor should start, load and switch bypass valve H1258 and discharge valve H1252 to automatic mode.

5.2 Procedure (Dunham-Bush)

_____ 1. Ensure control air is available.

_____2. Ensure open the low pressure surge tank inlet valve H1269M_____.

_____ 3. Open Dunham-Bush suction valve H1275M_____.

_____ 4. Close Sullair suction valve H1274M_____.

_____ 5. Open Dunham-Bush discharge valve H1285M_____.

_____ 6 Close Sullaire discharge valve H1284M_____.

_____ 7. Ensure open the seal gas compressor common discharge valves H1256M_____ (valve is located on ceiling of lower level near Vacuum System#1), and H2928M_____ (valve is located outside compressor Bldg. upstream of aerosol skid).

_____ 8. Ensure open the seal gas compressor make-up valve from pure helium gas. Valve is located on the column between Adsorbers 'A' and 'B' on the lower level.

_____ 9. Ensure open the high pressure surge tank isolation valve (located on tank outside of west end of refrigerator room).

_____ 10. Ensure all water supply/return valves are properly set, and adequate cooling water is available.

_____ 11. Press "START".

_____ 12. Check suction pressure and discharge pressure indicators.

Caution:
Immediately shut down compressor if needle of supply-pressure indicator is pegged at 30 PSIG. Check for proper phasing of the three phase connections to compressor. Interchange any two of the three-phase wires at the starter. The compressor is uni-directional and if operated in reverse direction for more than a few seconds, severe damage could be caused to the compressor pump.

_____ 13. Check oil level on pump oil sight glass.

_____ 14. Depress "LOAD" push button to load compressor, and observe suction and discharge pressures ensuring they are correct.

_____ 15. To shut down the compressor, press the "STOP" push-button (the screw-compressor pump automatically unloads when the compressor is shut down).

6. Documentation

6.1 The check off lines on the procedure are for place keeping only. The procedure is not to be initialed or signed, it is not a record.

6.2 The Shift Supervisor, or designee, shall document the completion of the procedure in the Cryogenics Control Room Log.

7. References

None

8. Attachments

None